

## Fractional Newtonian mechanics

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### Abstract

In the present paper, we have introduced the generalized Newtonian law and fractional Langevin equation. We have derived potentials corresponding to different kinds of forces involving both the right and the left fractional derivatives. Illustrative examples have worked out to explain the formalism. © Versita Warsaw and Springer-Verlag Berlin Heidelberg.

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### Keywords

Brownian motion, Fractional derivatives, Fractional Langevin equation, Fractional Newtonian mechanics, Fractional potential